

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 13 August 1999 (13.08.99)	
<b>International application No.</b> PCT/KR98/00482	<b>Applicant's or agent's file reference</b> PATRA-P9801
<b>International filing date</b> (day/month/year) 29 December 1998 (29.12.98)	<b>Priority date</b> (day/month/year) 31 December 1997 (31.12.97)
<b>Applicant</b> PARK, Young, Soul	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
28 July 1999 (28.07.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer M. Tablante</p> <p>Telephone No.: (41-22) 338.83.38</p>
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# TENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

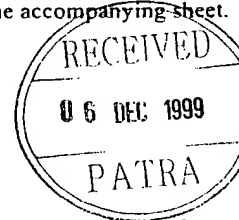
HWANG, Byung Do  
Rm 206, Regent Officetel Bldg.  
#547-8, Kuui-dong,  
Kwangjin-ku  
Seoul 143-709  
Republic of Korea

### NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference PATRA-P9801	Date of mailing (day/month/year) 24 Nov. 1999 (24.11.99)
International application No. PCT/KR 98/00482	International filing date (day/month/year) 29 Dez. 1998 (29.12.98)
Applicant PARK, Young Soul	

1. ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith.  
**Filing of amendments and statement under Article 19:**  
 The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):  
**When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report; however, for more details, see the notes on the accompanying sheet.  
**Where?** Directly to the International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland  
 Facsimile No.: (41-22) 740.14.35  
 For more detailed instructions, see the notes on the accompanying sheet.
2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
  - ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
  - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
4. **Further action(s):** The applicant is reminded of the following:  
 Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.  
 Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).  
 Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.



Name and mailing address of the ISA AUSTRIAN PATENT OFFICE Kohlmarkt 8-10 A-1014 Vienna +43 / 1 / 534 24 - 200	Authorized officer Koch +43 / 1 / 534 24 - 450
Facsimile No.	Telephone No.

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

#### What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

**When ?** Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

**How ?** Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

#### What documents must/may accompany the amendments ?

**Letter (Section 205(b)):**

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

**The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.**

## NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### "Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

### Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

# INTERNATIONAL COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

HWANG, Byung Do  
Rm 206, Regent Officetel Bldg.,  
#547-8, Kuui-dong,  
Kwangjin-Ku  
Seoul 143-709  
Republic of Korea

## PCT

### WRITTEN OPINION

(PCT Rule 66)

Date of mailing (day/month/year) 09 March 2000 (09.03.00)	
Applicant's or agent's file reference PATRA-P9801	<b>REPLY DUE</b> within 2 months/days from the above date of mailing
International application No. PCT/KR 98/00482	International filing date (day/month/year) 29 December 1998 (29.12.98)
Priority date (day/month/year) 31 December 1997 (31.12.97)	
International Patent Classification (IPC) or both national classification and IPC IPC <sup>6</sup> : B 29 D 31/50, A 43 B 13/18	
Applicant PARK, YOUNG SOUL	

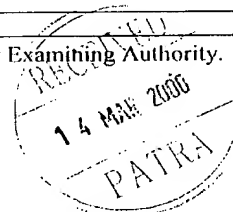
1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
  - I. ☒ Basis of the opinion
  - II. ☐ Priority
  - III. ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV. ☒ Lack of unity of invention
  - V. ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI. ☐ Certain documents cited
  - VII. ☐ Certain defects in the international application
  - VIII. ☐ Certain observations on the international application
3. The applicant is hereby invited to reply to this opinion.
 

**When?** See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

**How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

**Also** For an additional opportunity to submit amendments, see Rule 66.4.  
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis.  
For an informal communication with the examiner, see Rule 66.6.

**If no reply is filed**, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 30 April 2000 (30.04.00)



Name and mailing address of the IPEA/AT Austrian Patent Office Kohlmarkt 8-10; A-1014 Vienna	Authorized officer  Losenicky
Facsimile No. 1/53424/200	Telephone No. 1/53424/372

**I. Basis of the opinion**

1. With regard to the **elements** of the international application:\*

☒ the international application as originally filed

☐ the description:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the claims:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as „originally filed“.

**IV. Lack of unity of invention**

1. In response to the invitation (Form PCT/IPEA/405) to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.  
☐ paid additional fees.  
☐ paid additional fees under protest.  
☐ neither restricted nor paid additional fees.

2. This Authority found that the requirement of unity of invention is not complied with for the following reasons and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees:

3. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this opinion:

- ☒ all parts.  
☐ the parts relating to claims Nos. \_\_\_\_\_

## V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-4	YES
	Claims	5-11	NO
Inventive step (IS)	Claims	1	YES
	Claims	2-11	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

## 2. Citations and explanations

The documents cited in the search report are:

D1: DE 10 52 674 A

D3: EP 0 694 264 A2

D2: EP 0 695 514 A1

D4: US 3 444 591 A

The present invention does not satisfy the criterion set forth Article 33 (3) PCT because the subject-matter of claims 2 to 4 does not involve an inventive step in respect of the prior art. Document D1 which is considered to represent the most relevant state of the art, discloses a molding comprising a upper stage molding and two halves of a lower stage molding, from which the subject-matter of claim 2 to 4 differs only in that two columns are made to form throughout holes. This feature is merely one of several possibilities from which the skilled man would select, in accordance with circumstances, without the exercise of inventive skill in order to solve the problem posed.

The present invention does not satisfy the criterion set forth Article 33 (2) PCT because the subject-matter of claims 5 to 11 is not new in respect of the prior art.

Documents D2 and D3 disclose an outsole of a shoe in which throughout holes are passing through said sole.

Document D4 show prior art, not questioning novelty and inventiveness of the present subject matter.

In conclusion, claim 1 can be considered to be new and involving an inventive step.

Claims 2 to 4 can be considered new however not involving an inventive step.

Claims 5 to 11 can not be considered to be new and involving an inventive step.

The industrial applicability is given for all claims.



PROCESSED 23 JUN 2000

PCT

# REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum)

PATRA-P9801

## Box No. I TITLE OF INVENTION

The Outsole of shoe, its manufacturing method, and its molding

## Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

PARK, Young Soul

Baekjo Green Apartment 1309, #1248-7,  
Kupo-dong, Buk-ku, Pusan, Republic of Korea  
Postal code : 616-090

☒ This person is also inventor.

Telephone No.

82-051-625-2225

Facsimile No.

82-051-623-0550

Teleprinter No.

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:



all designated States



all designated States except the United States of America



the United States of America only



the States indicated in the Supplemental Box

## Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:



applicant only



applicant and inventor



inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:



all designated States



all designated States except the United States of America



the United States of America only



the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

## Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:



agent



common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

HWANG, Byung Do

Rm 206 Regent Officetel Bldg.  
#547-8, Kuui-dong, Kwangjin-ku,  
Seoul, Republic of Korea  
Postal code : 143-709

Telephone No.

82-02-455-6696

Facsimile No.

82-02-455-6697

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Box No. V DESIGNATION OF STATE

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

## Regional Patent

- ☐ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☐ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)


## National Patent (if other kind of protection or treatment desired, specify on dotted line):

- |   |   |
|---|---|
| <input type="checkbox"/> AL Albania                               | <input type="checkbox"/> LS Lesotho                                   |
| <input type="checkbox"/> AM Armenia                               | <input type="checkbox"/> LT Lithuania                                 |
| <input type="checkbox"/> AT Austria                               | <input type="checkbox"/> LU Luxembourg                                |
| <input checked="" type="checkbox"/> AU Australia                  | <input type="checkbox"/> LV Latvia                                    |
| <input type="checkbox"/> AZ Azerbaijan                            | <input type="checkbox"/> MD Republic of Moldova                       |
| <input type="checkbox"/> BA Bosnia and Herzegovina                | <input type="checkbox"/> MG Madagascar                                |
| <input type="checkbox"/> BB Barbados                              | <input type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input type="checkbox"/> BG Bulgaria                              | <input type="checkbox"/> MN Mongolia                                  |
| <input checked="" type="checkbox"/> BR Brazil                     | <input type="checkbox"/> MW Malawi                                    |
| <input type="checkbox"/> BY Belarus                               | <input checked="" type="checkbox"/> MX Mexico                         |
| <input checked="" type="checkbox"/> CA Canada                     | <input checked="" type="checkbox"/> NO Norway                         |
| <input type="checkbox"/> CH and LI Switzerland and Liechtenstein  | <input checked="" type="checkbox"/> NZ New Zealand                    |
| <input checked="" type="checkbox"/> CN China                      | <input checked="" type="checkbox"/> PL Poland                         |
| <input type="checkbox"/> CU Cuba                                  | <input type="checkbox"/> PT Portugal                                  |
| <input type="checkbox"/> CZ Czech Republic                        | <input checked="" type="checkbox"/> RO Romania                        |
| <input type="checkbox"/> DE Germany                               | <input checked="" type="checkbox"/> RU Russian Federation             |
| <input type="checkbox"/> DK Denmark                               | <input type="checkbox"/> SD Sudan                                     |
| <input type="checkbox"/> EE Estonia                               | <input type="checkbox"/> SE Sweden                                    |
| <input type="checkbox"/> ES Spain                                 | <input checked="" type="checkbox"/> SG Singapore                      |
| <input type="checkbox"/> FI Finland                               | <input type="checkbox"/> SI Slovenia                                  |
| <input type="checkbox"/> GB United Kingdom                        | <input type="checkbox"/> SK Slovakia                                  |
| <input type="checkbox"/> GE Georgia                               | <input type="checkbox"/> SL Sierra Leone                              |
| <input type="checkbox"/> GH Ghana                                 | <input type="checkbox"/> TJ Tajikistan                                |
| <input type="checkbox"/> GM Gambia                                | <input type="checkbox"/> TM Turkmenistan                              |
| <input type="checkbox"/> GW Guinea-Bissau                         | <input type="checkbox"/> TR Turkey                                    |
| <input type="checkbox"/> HR Croatia                               | <input type="checkbox"/> TT Trinidad and Tobago                       |
| <input checked="" type="checkbox"/> HU Hungary                    | <input type="checkbox"/> UA Ukraine                                   |
| <input checked="" type="checkbox"/> ID Indonesia                  | <input type="checkbox"/> UG Uganda                                    |
| <input checked="" type="checkbox"/> IL Israel                     | <input checked="" type="checkbox"/> US United States of America       |
| <input type="checkbox"/> IS Iceland                               | <input type="checkbox"/> UZ Uzbekistan                                |
| <input checked="" type="checkbox"/> JP Japan                      | <input checked="" type="checkbox"/> VN Viet Nam                       |
| <input type="checkbox"/> KE Kenya                                 | <input type="checkbox"/> YU Yugoslavia                                |
| <input type="checkbox"/> KG Kyrgyzstan                            | <input type="checkbox"/> ZW Zimbabwe                                  |
| <input type="checkbox"/> KP Democratic People's Republic of Korea |   |
| <input type="checkbox"/> KR Republic of Korea                     |   |
| <input checked="" type="checkbox"/> KZ Kazakhstan                 |   |
| <input type="checkbox"/> LC Saint Lucia                           |   |
| <input type="checkbox"/> LK Sri Lanka                             |   |
| <input type="checkbox"/> LR Liberia                               |   |

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☒ IN (India)

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input checked="" type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving Office
item (1) 31 December 1997 (31.12.97)	PATENT 1997-82345	KR		
item (2) 18 May 1998 (18.05.98)	PATENT 1998-17880	KR		
item (3) 07 July 1998 (07.07.98)	PATENT 1998-27375	KR		
<input type="checkbox"/> The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s):				
<small>* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.</small>				
Box No. VII INTERNATIONAL SEARCHING AUTHORITY				
<b>Choice of International Searching Authority (ISA)</b> <small>(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):</small>		<b>Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):</b> Date (day/month/year)      Number      Country (or regional Office)		
ISA / AT				
Box No. VIII CHECK LIST; LANGUAGE OF FILING				
This international application contains the following number of sheets: request : 4 description (excluding sequence listing part) : 22 claims : 4 abstract : 1 drawings : 20 sequence listing part of description : Total number of sheets : 51		This international application is accompanied by the item(s) marked below: 1. <input type="checkbox"/> fee calculation sheet 2. <input checked="" type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify):		
Figure of the drawings which should accompany the abstract:		Language of filing of the international application: English		
Box No. IX SIGNATURE OF APPLICANT OR AGENT				
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).				
HWANG, Byung Do 				

For receiving Office use only	
1. Date of actual receipt of the purported international application: 3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application: 4. Date of timely receipt of the required corrections under PCT Article 11(2): 5. International Searching Authority (if two or more are competent): ISA /	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received: 6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

For International Bureau use only
Date of receipt of the record copy by the International Bureau:

**Supplemental Box***If the Supplemental Box is not used, this sheet should not be included in the request.*

1. If, in any of the Boxes, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No. ..." [indicate the number of the Box] and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in particular:

- (i) if more than two persons are involved as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;
- (ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;
- (iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;
- (iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;
- (v) if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition," or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part": in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;
- (vi) if, in Box No. VI, there are more than three earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI;
- (vii) if, in Box No. VI, the earlier application is an ARIPO application: in such case, write "Continuation of Box No. VI", specify the number of the item corresponding to that earlier application and indicate at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed.

2. If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement: in such case, write "Designation(s) excluded from precautionary designation statement" and indicate the name or two-letter code of each State so excluded.

3. If the applicant claims, in respect of any designated Office, the benefits of provisions of the national law concerning non-prejudicial disclosures or exceptions to lack of novelty: in such case, write "Statement concerning non-prejudicial disclosures or exceptions to lack of novelty" and furnish that statement below.

Continuation of Box no. VI

Korean Application No 1998-27376  
filed on 07 July 1998 (07.07.98)

The demand must be filed directly with the Patent International Preliminary Examining Authority, or more Authorities are competent, with the one chosen by the applicant. The one or two-letter code of that Authority may be indicated by the applicant on the line below:  
IPEA/

23 JUN 1999

CHAPTER II

# DEMAND

under Article 31 of the Patent Cooperation Treaty:  
The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

28.07.1999 12.47

For International Preliminary Examining Authority use only	
AUSTRIAN PATENT OFFICE	28 July 1999 (28.07.99)
Identification of IPEA	Date of receipt of DEMAND

Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION		Applicant's or agent's file reference
International application No. PCT/KR98/00482	International filing date (day/month/year) 29 December 1998 (29.12.98)	(Earliest) Priority date (day/month/year) 31 December 1997 (31.12.97)
Title of invention THE OUTSOLE OF SHOE, ITS MANUFACTURING METHOD, AND ITS MOLDING		

Box No. II APPLICANT(S) PARK, Young Soul

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) PARK, Young Soul BAEKJO GREEN APT. 1309, #1248-7, KOUPO-DONG, BUK-KU, PUSAN 616-090 REPUBLIC OF KOREA		Telephone No.: 82-051-625-2225
		Facsimile No.: 82-051-623-0550
		Teleprinter No.:

State (that is, country) of nationality: KR	State (that is, country) of residence: KR
--	--

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:	State (that is, country) of residence:
--	--

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

결	담	담	부	장	필리사

State (that is, country) of nationality:	State (that is, country) of residence:
--	--

☐ Further applicants are indicated on a continuation sheet.

RECEIVED  
06 AUG 1999

## Box No. III AGENT OR COMMON REPRESENTATIVE: OR ADDRESS FOR CORRESPONDENCE

The following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*HWANG, Byung Do  
RM 206 REGENT OFFICETEL BLDG.  
#547-8, KUUI-DONG, KWANGJIN-KU,  
SEOUL, REPUBLIC OF KOREA  
POSTAL CODE : 143-709

Telephone No

82-02-455-6696

Facsimile No

82-02-455-6697

Teleprinter No

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent

## Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION

## Statement concerning amendments:\*

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filedthe description ☒ as originally filed☐ as amended under Article 34the claims ☒ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☒ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

\* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

## Language for the purposes of international preliminary examination:

☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.

## Box No. V ELECTION OF STATES

The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

## Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

For International Preliminary  
Examining Authority use only

received not received

- |   |    |        |                                     |                          |
|---|----|--------|-------------------------------------|--------------------------|
| 1. translation of international application                                 | 46 | sheets | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. amendments under Article 34  |    | sheets | <input type="checkbox"/>            | <input type="checkbox"/> |
| 3. copy (or, where required, translation) of<br>amendments under Article 19 |    | sheets | <input type="checkbox"/>            | <input type="checkbox"/> |
| 4. copy (or, where required, translation) of<br>statement under Article 19  |    | sheets | <input type="checkbox"/>            | <input type="checkbox"/> |
| 5. letter   |    | sheets | <input type="checkbox"/>            | <input type="checkbox"/> |
| 6. other (specify)  |    | sheets | <input type="checkbox"/>            | <input type="checkbox"/> |

The demand is also accompanied by the item(s) marked below:

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> fee calculation sheet                                | 4. <input type="checkbox"/> statement explaining lack of signature                                     |
| 2. <input checked="" type="checkbox"/> separate signed power of attorney                    | 5. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in<br>computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney;<br>reference number, if any: | 6. <input type="checkbox"/> other (specify):   |

## Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

HWANG, BYUNG DO



For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND: 28 July 1999 (28.07.99)

2. Adjusted date of receipt of demand due  
to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months  
from the priority date and item 4 or 5, below, does not apply.

☐ The applicant has been  
informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of  
Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival  
is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

# PCT

## CHAPTER II

### FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination

<p>International application No. <b>PCT/KR98/00482</b></p> <hr/> <p>Applicant's or agent's file reference <b>PATRA-P9801</b></p> <hr/> <p>Applicant <b>PARK, Young Soul</b></p> <hr/> <p>Calculation of prescribed fees</p> <p>1. Preliminary examination fee ..... <b>2,200ATS</b> <span style="border: 1px solid black; padding: 2px;">P</span></p> <p>2. Handling fee <i>(Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.)</i> ..... <b>2,020ATS</b> <span style="border: 1px solid black; padding: 2px;">H</span></p> <p>3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box ..... <b>4,220ATS</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: auto;">TOTAL</div> <hr/> <p>Mode of Payment</p> <table style="width: 100%;"> <tr> <td><input type="checkbox"/> authorization to charge deposit account with the IPEA (see below)</td> <td><input type="checkbox"/> cash</td> </tr> <tr> <td><input checked="" type="checkbox"/> cheque</td> <td><input type="checkbox"/> revenue stamps</td> </tr> <tr> <td><input type="checkbox"/> postal money order</td> <td><input type="checkbox"/> coupons</td> </tr> <tr> <td><input type="checkbox"/> bank draft</td> <td><input type="checkbox"/> other (specify):</td> </tr> </table> <hr/> <p>Deposit Account Authorization <i>(this mode of payment may not be available at all IPEAs)</i></p> <p>The IPEA/ ..... <input type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account.</p> <p><input type="checkbox"/> <i>(this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.</p> <hr/> <p>Deposit Account Number _____ Date (day/month/year) _____ Signature _____</p>	<input type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash	<input checked="" type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps	<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons	<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):	<p style="text-align: center;">For International Preliminary Examining Authority use only</p> <hr/> <p style="text-align: center;">Date stamp of the IPEA</p> <div style="border: 1px solid black; height: 300px; margin-top: 10px;"></div>
<input type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash								
<input checked="" type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps								
<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons								
<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):								



## PATENT COOPERATION TREATY

## PCT

REC'D 31 JAN 2002

WIPO PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>PATRA-P9801</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/KR 98/00482</b>	International filing date (day/month/year) <b>29 December 1998 (29.12.1998)</b>	Priority Date (day/month/year) <b>31 December 1997 (31.12.1997)</b>
International Patent Classification (IPC) or national classification and IPC <b>IPC<sup>7</sup>: B29D 31/50, A43B 13/18</b>		<b>RECEIVED</b> <b>SEP 10 2002</b>
Applicant <b>PARK, Young Soul</b>		<b>TECHNOLOGY CENTER #5700</b>

1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I. ☒ Basis of the opinion
- II. ☐ Priority
- III. ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV. ☐ Lack of unity of invention
- V. ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
- VI. ☐ Certain documents cited
- VII. ☐ Certain defects in the international application
- VIII. ☐ Certain observations on the international application

Date of submission of the demand <b>28 July 1999 (28.07.1999)</b>	Date of completion of this report <b>7 June 2000 (07.06.2000)</b>
Name and mailing address of the IPEA/AT <b>Austrian Patent Office Kohlmarkt 8-10 A-1014 Vienna Facsimile No. 1/53424/200</b>	Authorized officer <b>LOSENICKY</b>  Telephone No. 1/53424/372

Form PCT/IPEA/409 (cover sheet) (July 1998)

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR 98/00482

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

☒ the international application as originally filed

☐ the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the claims:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, as amended (together with any statement) under Article 19

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as „originally filed“ and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/KR 98/00482

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement	Novelty (N)	Claims 1-4	YES
		Claims 5-11	NO
	Inventive step (IS)	Claims 1	YES
		Claims 2-11	NO
	Industrial applicability (IA)	Claims 1-11	YES
		Claims	NO

### Citations and explanations (Rule 70.7)

The documents cited in the search report are:

D1: DE 10 52 674 A  
D2: EP 0 695 514 A1

D3: EP 0 694 264 A2  
D4: US 3 444 591 A

Though the Search Report in context with the Written Opinion transmitted to the Applicant raised severe objections with respect to novelty as well as obviousness pertinent to claims 1 to 11 of the present application, the Applicant did not submit any response thereto. Therefore, in view of the cited state of the art, the lack of novelty respectively inventiveness regarding said claims, as reasoned in the 1<sup>st</sup> Written Opinion, has to be maintained.

The present invention does not satisfy the criterion set forth Article 33 (3) PCT because the subject-matter of claims 2 to 4 does not involve an inventive step in respect of the prior art. Document D1 which is considered to represent the most relevant state of the art, discloses a molding comprising a upper stage molding and two halves of a lower stage molding, from which the subject-matter of claim 2 to 4 differs only in that two columns are made to form throughout holes. This feature is merely one of several possibilities from which the skilled man would select, in accordance with circumstances, without the exercise of inventive skill in order to solve the problem posed.

The present invention does not satisfy the criterion set forth Article 33 (2) PCT because the subject-matter of claims 5 to 11 is not new in respect of the prior art. Documents D2 and D3 disclose an outsole of a shoe in which throughout holes are passing through said sole.

Document D4 show prior art, not questioning novelty and inventiveness of the present subject matter.

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.  
PCT/KR 98/00482

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: **Box V (page 1)**

In conclusion, claim 1 can be considered to be new and involving an inventive step.  
Claims 2 to 4 can be considered new however not involving an inventive step.  
Claims 5 to 11 can not be considered to be new and involving an inventive step.  
The industrial applicability is given for all claims.

PCT

PTO/PCT Rec'd 29 JUN 2000

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PATRA-P9801	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/KR 98/00482	International filing date (day/month/year) 29 December 1998 (29.12.98)	(Earliest) Priority Date (day/month/year) 31 December 1997 (31.12.97)
Applicant PARK, Young Soul		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (See Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.: 3.10

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR 98/00482

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>6</sup>: B 29 D 31/50; A 43 B 13/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>6</sup>: B 29 D; A 43 B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPIL

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 1052674 A (PLASTIKFLEX) 12 March 1959 (12.03.59) see fig. 1.	2-4
X	EP 0695514 A1 (PARK) 7 February 1996 (07.02.96) totality.	5-11
X	EP 0694264 A2 (ADIDAS) 31 January 1996 (31.01.96) totality.	5-11
A	US 3444591 A (BECKA) 20 May 1969 (20.05.69) see fig. 1,2. -----	1

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

11 November 1999 (11.11.99)

Date of mailing of the international search report

24 November 1999 (24.11.99)

Name and mailing address of the ISA/AT

Austrian Patent Office  
Kohlmarkt 8-10; A-1014 Vienna  
Facsimile No. 1/53424/200

Authorized officer

Losenicky

Telephone No. 1/53424/1372

INTERNATIONAL SEARCH REPORT  
Information on family members

International application No.  
PCT/KR 98/00482

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(54) Title: THE OUTSOLE OF SHOE, ITS MANUFACTURING METHOD, AND ITS MOLDING			
(57) Abstract			
<p>A method of manufacturing outsole of sports shoes in which the throughout holes are formed, manufacturing method comprising the steps of forming the midsole so as to be cut and bisected, joining the cut surface after this, and joining midsole by covering the entire lower surface of midsole after this. A molding for forming of the midsole wherein the molding comprises three widely known and disclosed stages, the molding comprises a lower stage molding (12), in which the throughout hole protrusion (15) is fixed in two columns, a middle stage molding (11), in which the throughout holes (15) that is formed in two columns by forming two sheds (18) divided by a separating partition (13) are inclined toward a separating partition (13) of the respective shed (18), and a higher stage molding (10), in which a molding protrusion (14) that is inserted through sheds (18) of the middle molding (11) so as to be placed in parts, where the respective the throughout hole protrusion (15) formed on the middle molding (12) is not formed, is formed. An outsole of a shoe, in which the throughout holes are passing through the front edge and back edge in side direction of the midsole formed in a shooting molding.</p>			



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# **The Outsole of shoe, its manufacturing method, and its molding**

## **BACKGROUND OF THE INVENTION**

### **Field of the Invention**

The present invention relates to the outsole of sports shoes, wherein the throughout holes passing through a lateral surface are formed, their manufacturing method, and their molding, and, more particularly, to the outsole of sports shoes wherein the throughout holes passing through a lateral surface are formed, their manufacturing method, and their molding, so that, by forming the throughout holes so as to be through a lateral surface in the side direction of midsole as well as by reducing the weight of sports shoes, it is intended not only to increase the cushion without using air bags, but also to have a good effect keeping warm since the throughout holes are separated from the ground after wearing the sports shoes.

### **Discussion of Related Art**

It is well-known that since in the conventional outsole of sports shoes, the weight of becomes light and, in order to make the comfortable cushion, an air bag is used in the case of manufacturing the midsole, in the case of manufacturing it, it is necessarily required to work in order to fix an additional air bag on the molding in which a midsole is formed, and also since these air bags use the

one that is manufactured as an additional work at the state that air or gas is inserted, it has caused the increase of the manufacturing cost as well as the defective rate of goods and it has a drawback in that it will lose the function as sport shoes in case that air bag is exploded after wearing it, and etc.

Currently, as a way of manufacturing the midsole in the outsole of sports shoes, it has been used that since it is formed at the state that the midsole is placed horizontally, it is molded in a shooting method normally by raising it onto upside and inserting resin, which is used to be shot, to the mold of molding consisting of the 2nd or 3rd stage and heating it up to a fixed temperature.

Accordingly, as a structure of a molding for the manufacture, as normally shown in FIG. 9, it has been used as a way of manufacturing the outsole of sports shoes that the middle stage molding 200, which is amassed continuously upwardly from the lower stage molding 100 and the higher stage molding 300 in which a protrusion 600 is formed, are raised sequentially upwardly.

Also, in order to increase the cushioning force as well as to reduce the weight of shoes today, normally as shown in FIG. 9, molding operation is performed in a shooting way by forming a protruding pin 400 so that an air

bag may be fixed in the side partition of the molding and then fixing the air bag by inserting an air bag between the side partition of the molding and a protruding pin 400, or an air bag is mounted on the midsole, which is molded, by mounting the air bag into the inserting tube 500 by forming the inserting tube 500.

However there is a drawback in that, since additional air or gases are not inserted into an air bag, in the case that air bags is exploded, the cushion function of shoes is probably reduced.

Another drawback is that these kinds of air bags are costly and expensive due to the cost increase since the air bags should be made specially.

#### **SUMMARY OF THE INVENTION**

Accordingly, in order to overcome such drawbacks in the conventional art, it is therefore an object of the present invention to provide the outsole of sports shoes, in which the throughout holes, which are passed through a lateral surface, are formed on the lateral surface of the midsole of sports shoes which are constituted with an outsole and a midsole, so that its weight is reduced and its cushion is increased by the throughout holes which are passed through a lateral surface, and the cushioning force is protected as the partition which is created between the throughout holes plays a roll as the reinforcing support.

It is another object to provide a midsole of sports shoes, in which the throughout holes are formed on the lateral direction of the midsole simply by bisecting the midsole at the state that the molding midsole is erected on a lateral surface, molding the respective one, glueing them, and then glueing the midsole in order to form the throughout holes.

It is another object to provide a manufacturing method in which the midsole is formed integrally in a way that the manufacturing molding is formed into two stages, the lower stage molding is divided into a fixed molding and an operational molding, and only the operational molding of a side can be separated in order to manufacture the midsole integrally, wherein the throughout holes are formed in the lateral direction by not molding at the state that the midsole is erected but molding at the horizontal state.

It is another object to provide a manufacturing method which can be manufactured without a coupling line by lifting up at the state that only middle stage molding, among three stage moldings which are manufacturing moldings, is being divided into the right and left side in order not to form the coupling lines or in order to form the coupling lines on the midsole, in which the throughout holes are formed because the fixed molding is separated

from the operational molding in the midsole formed as these.

It is another object to provide the midsole of sports shoes, in which the elastic bar or the elastic tube, which is made of flexible material and has a good elastic force in order to increase a cushion-maintaining force of the throughout holes so that the restoring force of the throughout holes may be reinforced, is formed on the front or the back of the throughout holes.

It is another object to provide the midsole of sports shoes, in which the shapes of the throughout holes are diversified due to these moldings so that a variety of designs can be made while having a different cushioning force

It is another object to provide the midsole of sports shoes, in which a filler or a reinforcing tube for a stopper is formed in these the throughout holes, so that the elastic force can be protected.

It is another object to provide a molding which can manufacture midsoles 22 integrally

To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described, there is provided a method of manufacturing the outsole of sports shoes, in which the

throughout holes are formed, comprising the steps of forming the midsole so as to be cut and bisected, joining the cut surface after this, and joining the midsole by covering the entire lower surface of midsole after this.

According to another aspect of the present invention, there is also provided the outsole of a shoe, in which the throughout holes are passing through the front edge and the back edge in the side direction of midsole formed in a shooting molding.

According to another aspect of the present invention, there is also provided a molding for forming of the midsole, wherein the molding comprises three widely known and disclosed stage moldings, the moldings comprising a lower stage molding 12, in which the throughout hole protrusion 15 is fixed in two columns, a middle stage molding 11, in which the throughout holes 15 that is formed in two columns by forming two sheds 18 divided by a separating partition 13 are inclined toward the separating partition 13 of the respective shed 18, and a higher stage molding 10, in which a molding protrusion 14 that is inserted through the sheds 18 of the middle molding 11 so as to be placed in parts, where the respective throughout hole protrusion 15 formed on the middle molding 12 is not formed.

### BRIEF DESCRIPTION OF THE ATTACHED DRAWINGS

A more complete appreciation of the invention, and many of the attendant advantages thereof, will be readily apparent as the same becomes better understood by reference to the following detailed description when considered in conjunction with the accompanying drawings in which like reference symbols represent the same or similar components, wherein:

FIG. 1 is a perspective view showing the manufacturing steps of the outsole of the sports shoes;

FIG. 2 is a perspective view of an example of molding for forming the midsole shown in the first step of FIG. 1;

FIG. 3 is a perspective view showing the configuration state of another molding for forming the midsole;

FIG. 4 is a perspective view showing the configuration state of another molding, in which a fixed molding and a operational molding are closed;

FIG. 5 is a perspective view of the appearance showing the state, in which the molding of FIG. 3 is combined in order to form the midsole;

FIG. 6 is a perspective view showing the state, in which a fixed molding and an operational molding are opened so as to indicate that an air bag can be mounted on the front edge of the molding shown in FIG. 3;



FIG. 7 is a perspective view showing the configuration state of another molding for forming the midsole;

FIG. 8 is a perspective view showing the state, in which the middle stage molding of FIG. 7 is lifted;

FIG. 9 is a perspective view showing the structure of the molding, in which a conventional midsole is formed;

FIG. 10 is a cross sectional view of the state, in which the throughout holes of the midsole are formed to be slanted;

FIG. 11 is a cross sectional view of the state, in which a latticed support is supported in the throughout holes of the midsole;

FIG. 12 is a cross sectional view of the state, in which a three legged support is formed into the throughout holes of the midsole;

FIG. 13 is a cross sectional view of the state, in which a vertical support is formed into the throughout holes of the midsole;

FIG. 14 is a cross sectional view of the state, in which the throughout holes of the midsole are formed entirely;

FIG. 15 is a cross sectional view of the state, in which a plurality of the throughout holes on the midsole are formed into the essential input part;

FIG. 16 is a cross sectional view of the state, in which a plurality of the throughout holes on the midsole

are formed into the essential input part and are covered with the stopper;

FIG. 17 is a cross sectional view of the state, in which the throughout holes of the midsole are formed into two stories;

FIG. 18 is a cross sectional view of the state, in which the throughout holes of the midsole are formed into two stages so as to be zigzagged;

FIG. 19 is a cross sectional view of the state, in which an air bag is mounted upwardly into the throughout holes of the midsole.

FIG. 20 is a cross sectional view of the state, in which a curved elastic plate is mounted upwardly into the throughout holes of the midsole.

FIG. 21 is a perspective view of the state, in which the throughout holes of the midsole are passed through the front edge and the back edge all;

FIG. 22 is a cross sectional view of the state, in which a plurality of fine erecting protrusion is formed into the throughout holes of the front edge on the midsole;

FIG. 23 is a perspective view of the state, in which the curved protrusion is formed into the throughout holes of the midsole;

FIG. 24 is a perspective view showing another shape of the curved protrusion;

FIG. 25 is a perspective view of the state, in which a supporting protrusion is formed on the throughout holes of the midsole;

FIG. 26 is a cross sectional view of the state, in which a shed is formed, in which a lateral part of the throughout holes on the midsole is incised;

FIG. 27 is a cross sectional view of the state, in which a supporting structure is inserted on the shed;

FIG. 28 is a cross sectional view, in which another shape of the shed is indicated;

FIG. 29 is a cross sectional view, in which the outsole is attached into the shed of the midsole;

FIG. 30 is a perspective view of the state, in which an elastic bar is formed for reinforcing the throughout holes of the midsole;

FIG. 31 is a perspective view of the state, in which an elastic bar is formed for reinforcing the throughout holes of the midsole.

FIG. 32 is a cross sectional view showing the state, in which the elastic plate is mounted in the front or the back position of the throughout hole in the midsole.

#### **DETAILED DESCRIPTION OF PREFERRED EMBODIMENT**

Hereunder, the most preferred and desirable embodiments of this invention will be in detail described.

As shown in FIG.1, one of the embodiments for the manufacturing method of the invention for forming the throughout holes into the lateral direction of the midsole is the manufacturing method comprising three steps as following.

First of all, in the first step, the left surface and right surface corresponding to the outside lateral surface of the midsole 20 are placed at the lower stage molding 12 and are molded to be divided in half. In the second step, the cut surface 21, which have been formed to be bisected at the above, is attached by the attaching surface. In the third step, the outsole 50 is attached on the lower part of the midsole which is attached and formed.

At this time, the reason why the left side and right lateral surfaces corresponding to the outer lateral surface are placed in the lower part of the lower stage molding 12 is that the beauty of shoes looks good and the throughout holes 22 can be reinforced only when the throughout holes exposed outwardly on the left side and right lateral surfaces corresponding to the outer lateral surface should be widened in the case that the throughout holes 22 are formed since the higher stage molding 10 and the middle stage molding 11 can be lifted up.

As a method of glueing the cut surface 21, there is a way of bonding under the pressure by using an adhesive.

Also, as a way of attaching the outsole 50, there is a way of bonding under the pressure by using an adhesive.

Accordingly, it is possible to form the midsole, in which the throughout holes are drilled in a lateral direction, in a conventional molding method, since a form is taken at the state that the midsole 20, which is to be formed, is elected.

As a molding configuration for forming the midsole 20 which is divided in half, in a widely known and disclosed molding which is constituted with three stage moldings as shown in FIG. 2, the molding configuration comprises a lower stage molding 12, in which the throughout hole protrusion 15, which is protruding selectively according to the position and the shape of the throughout holes 22 formed the front edge and the back edge of the midsole 20 so as to be inclined toward a side, is fixed in two columns, a middle stage molding 11, in which the throughout holes 15 that is formed in two columns by forming two sheds 18 divided by a separating partition 13 are inclined toward the separating partition 13 of respective shed 18, and a higher stage molding 10, in which the molding protrusion 14 that is inserted through sheds 18 of the middle molding 11 so as to be placed in parts, where the respective throughout hole protrusion 15 formed on the middle molding 12 is not formed, is formed.

At this time, the molding protrusion 14 is protruding in an erect state in order to form the sole of the foot of the midsole 20, which is formed in a shooting method, in a lateral surface.

At this time, the pressing surface 17, in which the molding protrusion 14 is not formed in the higher stage molding 10, is adhering closely to the top surface of the throughout holes 15 formed in the lower stage molding 12 in the case that the higher stage molding 10 is shut up.

Accordingly, in the molding configured as this, if forming the midsole 20, the respective midsole 20 is formed at the state that the cut surface 21 is symmetrized so as to be formed and is bisected, as shown in FIG. 1, and then, after the cut surfaces of both sides, is glued each other, the outsole 50 is attached on a bottom of the midsole 20.

At this time, since the throughout holes 22, which is drilled in a lateral direction of the midsole, is designed to be widened in an outer lateral surface, the beauty of the shoes looks good and the restoring force of the throughout holes 22 can be maintained. Also it is possible not only to increase the cushioning force of the throughout holes 22 since the partition 24 formed between the throughout holes 22 plays a roll of reinforcing support,

but also to provide goods in a variety of design by transforming the throughout hole protrusion 15 in the case of forming the throughout holes 22.

Also, in the case that the midsole is not manufactured to be bisected, but to be integral, the structure of the molding, as shown in FIG. 3 and FIG. 6, is a structure which lifts up the higher stage molding 10, as the molding is divided into two stages, divides the lower stage molding 12 into the fixed molding 40 and the operable molding 41, so that, by making only the operable molding 41 pulled off in direction of a side, the midsole 20, in which the throughout holes 22 is formed, can be manufactured integrally.

At this time, the throughout holes 15 mounted on the fixed molding 40 and the operational molding 41 is designed to be protruding in the lateral direction at the state that it is fixed on the lateral surface, and the throughout holes 15 formed on the fixed molding 40 and the operational molding 41 is designed to be geared with each other. At this time, as a method of being geared, there is a method, in which the front edge of the throughout protrusion 15 comes in contact with each other, and the method, in which the front edge is inserted and combined because of the protrusion 15a and the essential input part 15b.

At this time, the throughout holes 15 is formed on the center of the lateral surface in the case that it is formed on the lateral surface of the fixed molding 40 and the operational molding 41 and, in the higher stage molding, the forming protrusion 14 is protruding on the plane in order to form the sole of the foot in the midsole 20 on its upper surface.

Also, in the case that the throughout holes 15 are formed only on the fixed molding 40 of the lower stage molding 12, even though there is a difficulty in pulling out the formed midsole 20, it is possible to pull out easily the baby shoes in which the width of the midsole is narrow.

Also, in the case that the operational molding 41 is pulled out in the lateral direction, as it goes down due to the weight of the operational molding 41 itself, in the case that the moldings are required to be combined once again, in order to prevent the throughout protrusion 15 from not coming in contact with each other, a guide support plate 42 is formed in a fixed width on the place where the operational molding sinks.

In the case that the throughout holes 22 of the midsole 20, which is formed by the throughout hole protrusion 15, is greatly formed, the air bag 23 can be



mounted only on the upper surface of the throughout holes 22 in the midsole 20 at the time of forming by forming the fixed pin 43 into a side of the throughout hole protrusion 15 and inserting to fix the air bag 23 between the fixed pin 43 and the throughout hole protrusion 15 so that the air bag 23 may be mounted on the top surface of the throughout holes 22 in order to restore the cushion completely. Also, at this time, instead of the air bag 23, the curved elastic plate 23a can be mounted.

Also, the air bag 23 can be mounted on the center of the throughout hole, in which it is passed on the front edge, at the time of forming it by fixing air bag 23 in the case that the operational molding 41 is shut up, and by placing the air bag 23 on the throughout hole protrusion 15c, with the throughout holes 15 not being attached closely, on the front edge, in which the throughout hole protrusion 15 is formed, in the case that the fixed molding 40 and the operational molding 41 are shut up.

Also as the right and left sides of the middle stage molding 11 are widened 11 by three stage moldings as shown in FIG. 7 and FIG. 8, the coupling line 28 can be designed not to be indicated on the midsole 20.

For this, a molding, in which a coupling line 28 cannot be indicated on the formed midsole 20, wherein the

middle stage molding, in which a fixed space is formed so that the molding protrusion 14 of higher stage molding 10 may be inserted, is divided into the left-sided middle stage molding 40 and the right-sided middle stage molding 41, and is pulled off so that it may be widened into the left and the right directions and the respective throughout protrusion 15 is protruding in the side direction of the left middle stage molding 40 and the right middle stage molding 41 and, in the case that the left-sided middle stage molding 40 and the right-sided middle stage molding 41, in which the respective throughout protrusion 15 is formed, are opened and then shut, so that it may be gathered in the exact position; and in the case that the left-sided middle stage molding 40 and the right-sided middle stage molding 41 are gathered by forming the higher side protrusion 45, in which a protrusion jaw 44 is formed on the lower stage molding 12, so that it may be adhering exactly by the protrusion jaw 44 and the support surface 46 having a fixed width may be formed in order to maintain the left and the right balance at time of adherence.

Also, the midsole manufactured as the above can form the throughout holes so as to have a fixed diameter and shape normally on the front edge and the back edge, but, in the case that these the throughout holes are formed, the partition 24, which is made between the throughout holes 22 and the throughout holes 22, can have an increased cushion and can maintain a restoring force according to the

position of the throughout hole and the partition 24 in the case that a user wears it and walks.

Also, the shape of the throughout holes 22 in the midsole 20 which is formed in a shooting method as shown in FIG.10 is slanted in the front direction and formed to be slanted in the back direction, so that it is possible to achieve the increased cushion and restoring force as well.

Also, as shown in FIG. 11, not only it is possible to increase the cushion but also to prevent alien substance from being inserted by allowing a large the throughout hole 22 to be formed on the back edge of the midsole 20 so as to form the latticed support 25. Also, as shown in FIG. 12, the cushion can be reinforced by forming a triangle area 25a on the great throughout holes 22. Also as shown in FIG. 13, in the case that a vertical support 25b is formed on the large throughout holes 22, it is possible to make goods having diversified designs, which can increase a restoring force as well as which can increase the cushioning force.

Also as shown in FIG. 14, the width of a hole, which receives much force, can be increased or the width of a hole, which receives less force, can be decreased by differentiating the width of holes from the throughout holes 20 having the same size on the entire surface of the

midsole 20. At this time, if the shape of the throughout holes 22 should be maintained horizontally on the bottom surface which comes in contact with the ground and it should be slanted upwardly on the sole of the foot, it will be good for maintaining the same cushion. In this case, the shape of the throughout hole is shown as an angled shape, but the angled shape can be made as a round shape.

Also, as shown in FIG. 15, the beauty of the shoes can be graceful by forming the tiny the throughout holes which gather several the throughout holes 22 in a fixed appearance and forming these tiny the throughout holes 22 into inside of the essential input groove 26 which is grooved in a fixed size and a stopper 27 can be used on this essential input groove 26 as shown in FIG. 16.

At this time, in the case that stoppers 27 are formed, in order to prevent alien substance from inserted into the throughout holes 22, stoppers 27 can be formed for all the throughout holes 22.

Also, the throughout holes 22, as shown in FIG. 17, forms the back edge in a multi layer as shown in FIG. 17 or the throughout holes 22 can be multilayered in order to be placed in a zigzagged form as shown in FIG. 18.

By mounting the air bag 23 on the upper side of the throughout holes 22 as shown in FIG. 19, at the time of walking, the restoring force can be increased by the cushion of the air bag 23. Also, the elastic plate 23a which is curved as a substitute of the air bag 23 can be mounted as shown in FIG. 23.

Also, the throughout holes 22, as shown in FIG. 21, can be used by passing through the entire parts of the front edge and the back edge. The fine erect protrusions 29 can be formed on the throughout holes of the front edge as shown in FIG. 22.

The curved protrusions 29a, which are different in size, can be formed as shown in FIG. 23 and FIG. 24. Also, the supporting protrusions 29b can be formed as shown in FIG. 25

In the above the throughout holes, a filler which has good cushion can be filled and the elastic tube made in tube type cane inserted for protecting the throughout holes.

Also, as shown in FIG. 26 and FIG. 28, the lower surface of the midsole 20 is cut and a shed 22a is formed. The shed 22a forms the support 22b so that it may be supported. In the case that the support 22b is not formed, as shown in FIG. 29, cushioning force can be increased by

glueing the outsole 50 and the supporting structure 23b can be formed inside of the throughout hole 22, in which a shed 22a is formed.

Also, as shown in FIG. 30 and FIG. 32, by placing the elastic plate 31 or the elastic bar 30 in the front or the back of the throughout hole 22, the elastic force of the throughout hole 22 will be protected.

Also, in order to form the throughout hole on the midsole, the throughout holes can be formed by inserting and glueing a shed which is formed in the midsole.

Accordingly, it will be an effect that cushions can be increased by the elastic force of the throughout hole due to the throughout hole, which is passed through the lateral direction of the midsole. Another effect is that the partition is endowed with the restoring force by cushion because of the throughout holes which are holes. Another further effect will be not only increasing the cushion because of the throughout holes, but also preventing a foot from being cold because the foot is separated from the ground because of the reinforcing support and the throughout holes even in the case that a user stands on the ice or snow at the state that he wears the shoes. Still, another effect will be that a user can use shoes which give him a refreshing feeling because the shoes can be separated

from the hot ground due to radiant heat during a summer season.

Finally, if the throughout holes which are passed through the lateral direction of the midsole are formed according to this invention, it is possible to increase the cushion and to reduce weight. Also, it is possible to manufacture them easily because of the improvement of the manufacturing step and the development of molding for these the throughout holes. Also, due to the improvement of the manufacturing step and the development of molding for these the throughout holes, the outsole for a variety of sports shoes can be provided.

It will be apparent to those skilled in the art that various modifications can be made in the [title] of the present invention, without departing from the spirit of the invention. Thus, it is intended that the present invention covers such modifications as well as variations thereof, within the scope of the appended claims and their equivalents.

**What is claimed is:**

1. A method of manufacturing outsole of sports shoes in which the throughout holes are formed, said manufacturing method comprising the steps of:

forming the midsole so as to be cut and bisected,  
joining the cut surface after this, and  
joining midsole by covering entire lower surface of midsole after this.

2. A molding for forming of midsole, wherein the molding comprises three widely known and disclosed stage moldings, the molding comprises:

a lower stage molding 12, in which a throughout hole protrusion 15 is fixed in two columns,

a middle stage molding 11, in which throughout holes 15 that is formed in two columns by forming two sheds 18 divided by a separating partition 13 are inclined toward a separating partition 13 of respective shed 18, and

a higher stage molding 10, in which a molding protrusion 14 that is inserted through sheds 18 of said middle molding 11 so as to be placed in parts, where respective throughout hole protrusion 15 formed on said middle molding 12 is not formed, is formed.

3. The molding which can manufacture midsoles 22 integrally, in which throughout holes 22 are formed by:

lifting up higher stage molding 10,



dividing lower stage molding 12 into fixed molding 40 and operable molding 41, protruding throughout hole protrusion 15, which is mounted on fixed molding 40 and operable molding 41, in direction of a side at fixed state on a side, and making only operable molding 41 being pulled off in direction of a side.

4. The molding, in which a coupling line 28 cannot be indicated on formed midsole 20, wherein said middle stage molding, in which a fixed space is formed so that molding protrusion 14 of said higher stage molding 10 may be inserted, is divided into left-sided middle stage molding 40 and right-sided middle stage molding 41, and is pulled off so that it may be widened into left and right directions;

and respective throughout protrusion 15 is protruding in side direction in left middle stage molding 40 and right middle stage molding 41; and in case that left-sided middle stage molding 40 and right-sided middle stage molding 41, in which respective throughout protrusion 15 is formed, are opened and then shut, so that it may be gathered in exact position; and in case that left-sided middle stage molding 40 and right-sided middle stage molding 41 are gathered by forming higher side protrusion 45, in which a protrusion jaw 44 is formed on lower stage molding 12, so that it may be adhering exactly by protrusion jaw 44 and support

surface 46 having a fixed width may be formed in order to maintain left and right balance at time of adherence.

5. An outsole of a shoe, in which the throughout holes are passing through front edge and back edge in side direction of midsole formed in a shooting molding.

6. The outsole of a shoe according to claim 5, wherein a vertical support is formed into throughout holes of a midsole.

7. The outsole of a shoe according to claim 5, wherein stoppers are formed on throughout holes of midsole.

8. The outsole of a shoe according to claim 5, wherein throughout holes are formed at state that lower surface of midsole is opened.

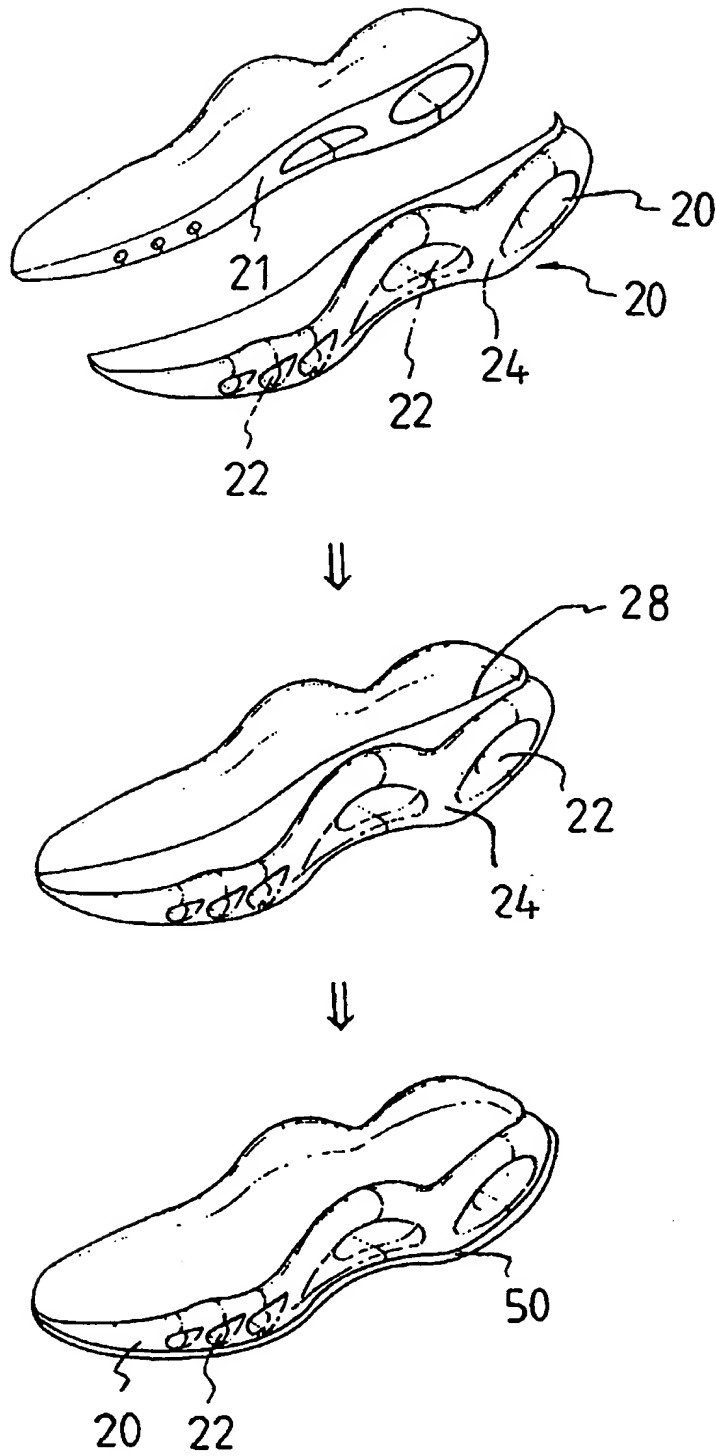
9. The outsole of a shoe according to claim 5, wherein throughout holes are formed by attaching outsole on opened midsole.

10. The outsole of a shoe according to claim 5, wherein elastic plates or elastic bar is formed in front or back of throughout holes of midsole.

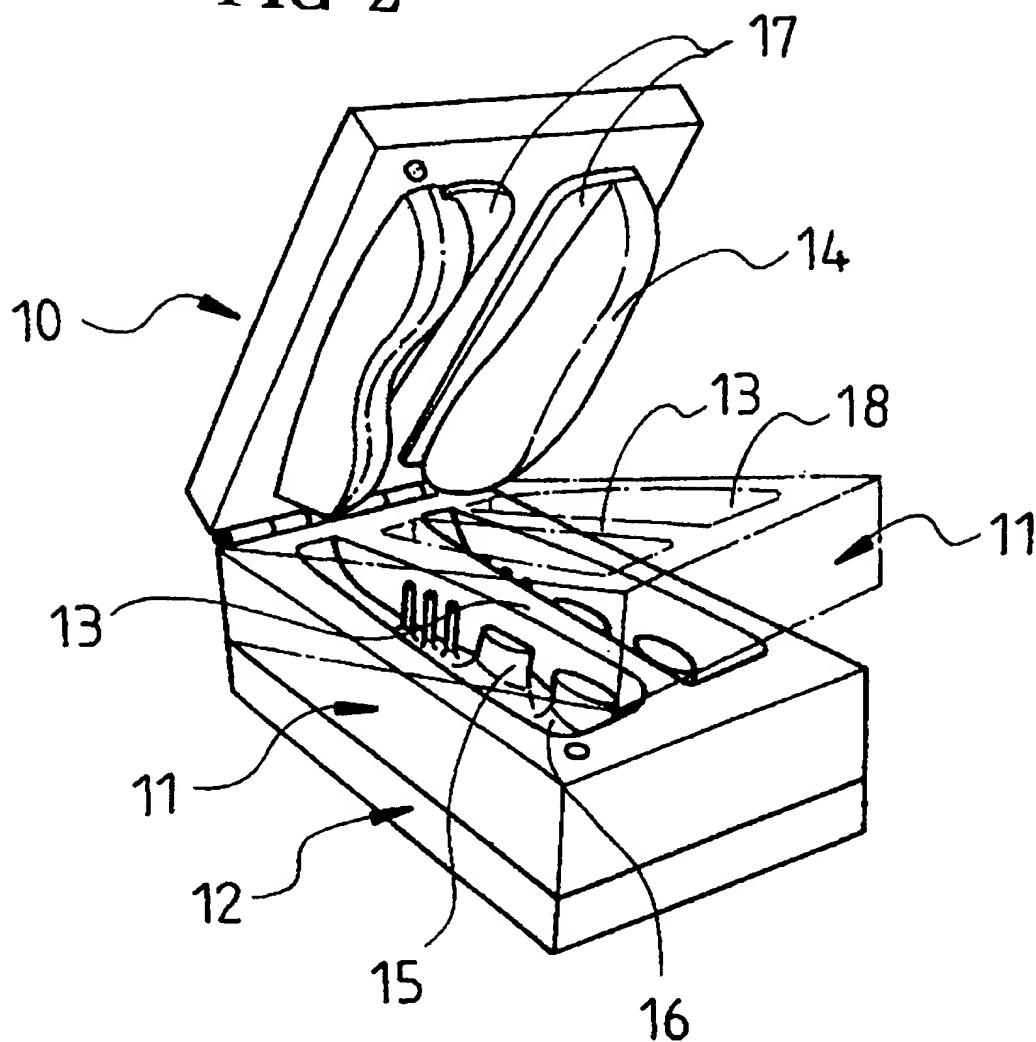
11. The outsole of a shoe according to claim 5, wherein erect protrusions are formed into throughout holes of the midsole.

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FIG 1



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**FIG 2**

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FIG 3

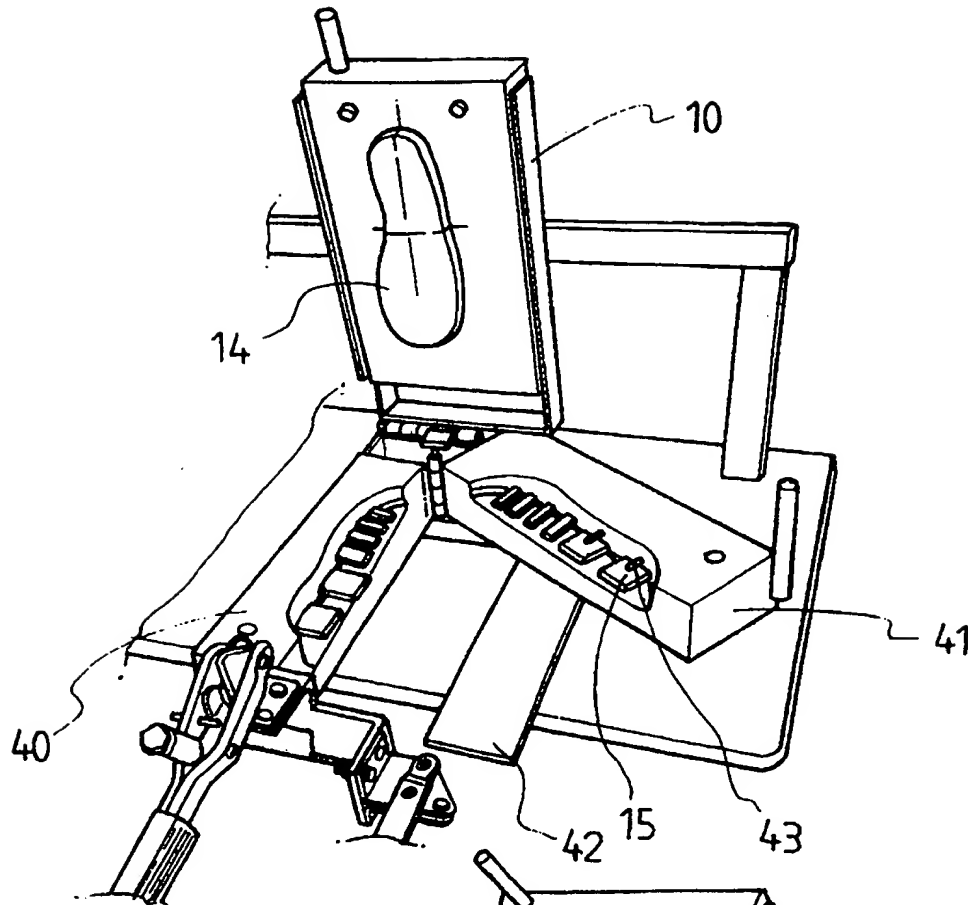
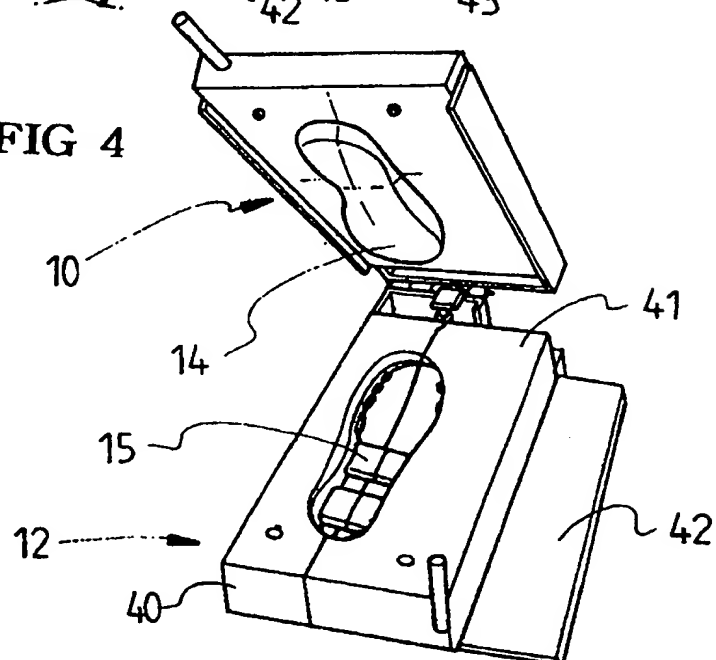
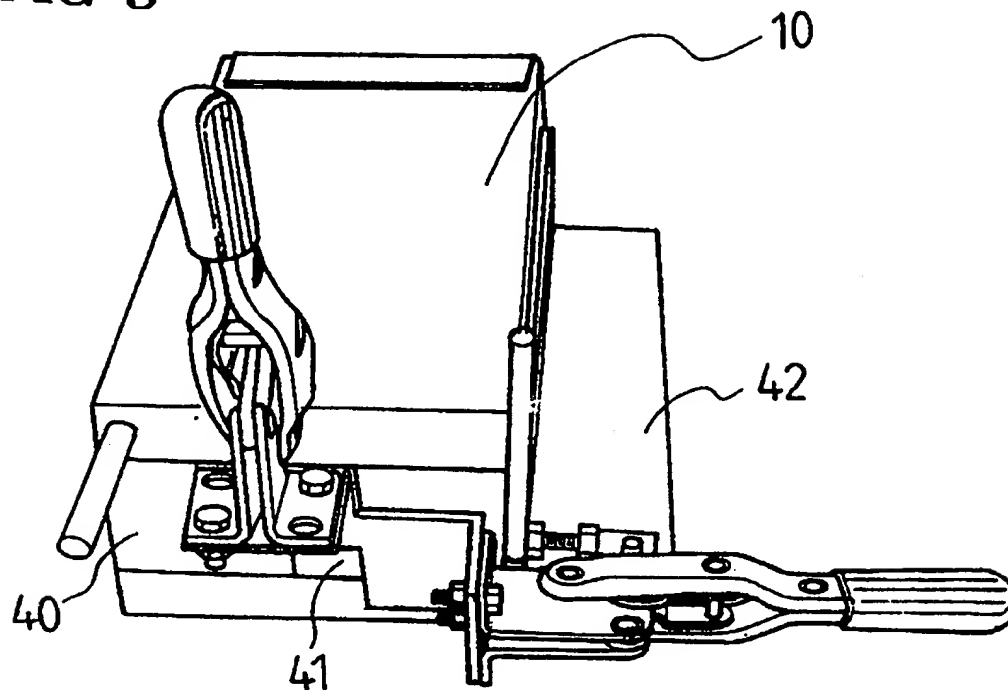


FIG 4



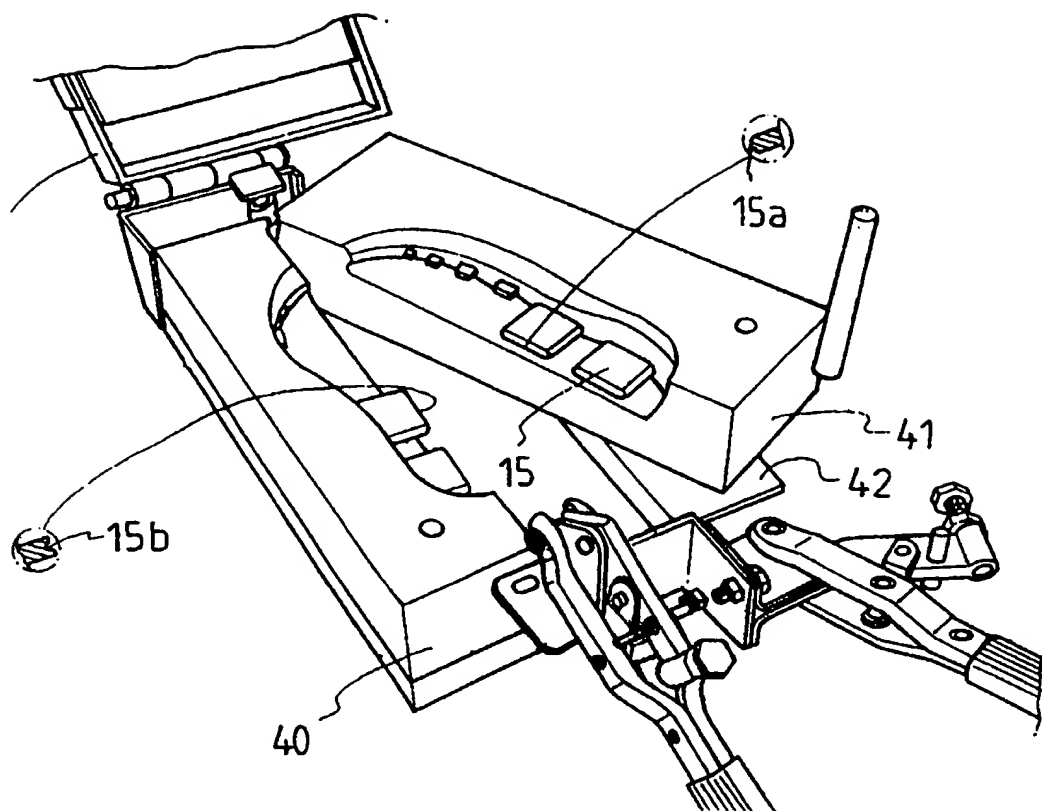
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FIG 5



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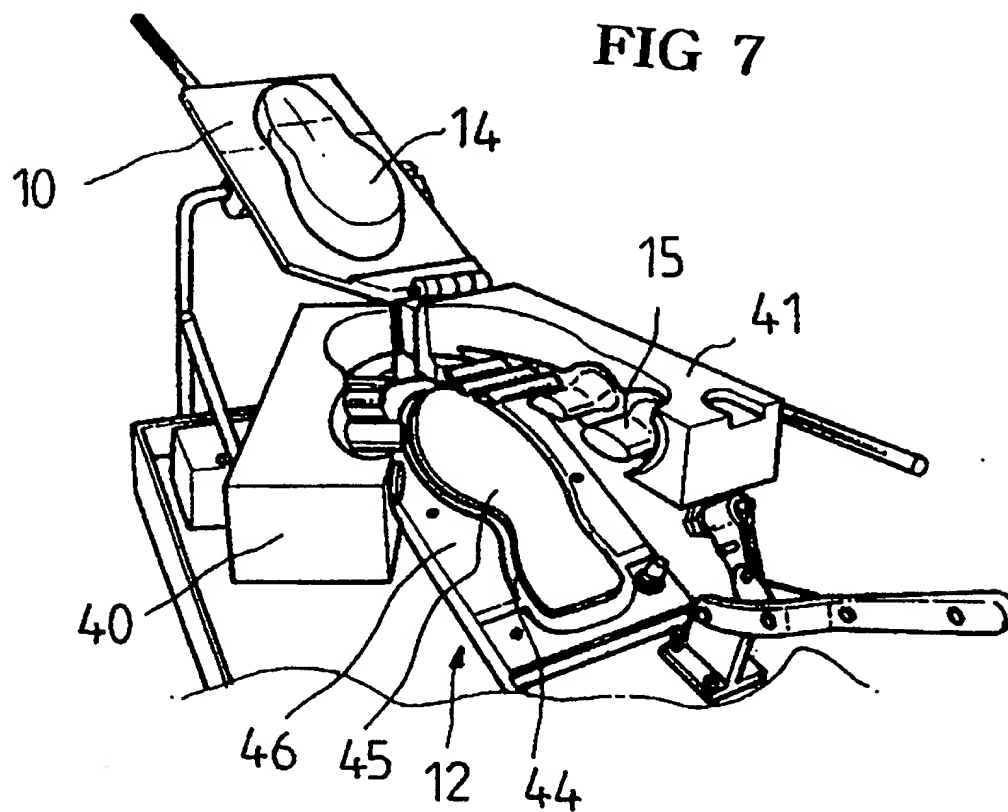
FIG 6





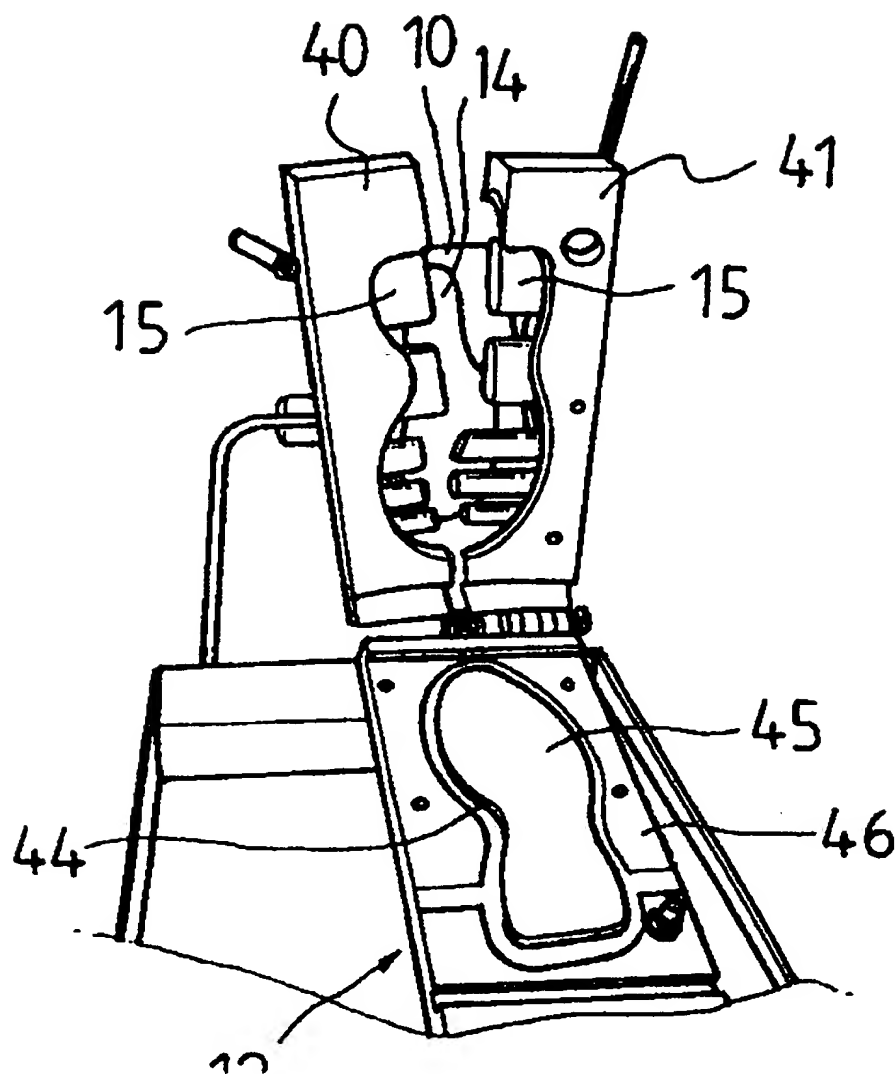
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FIG 7

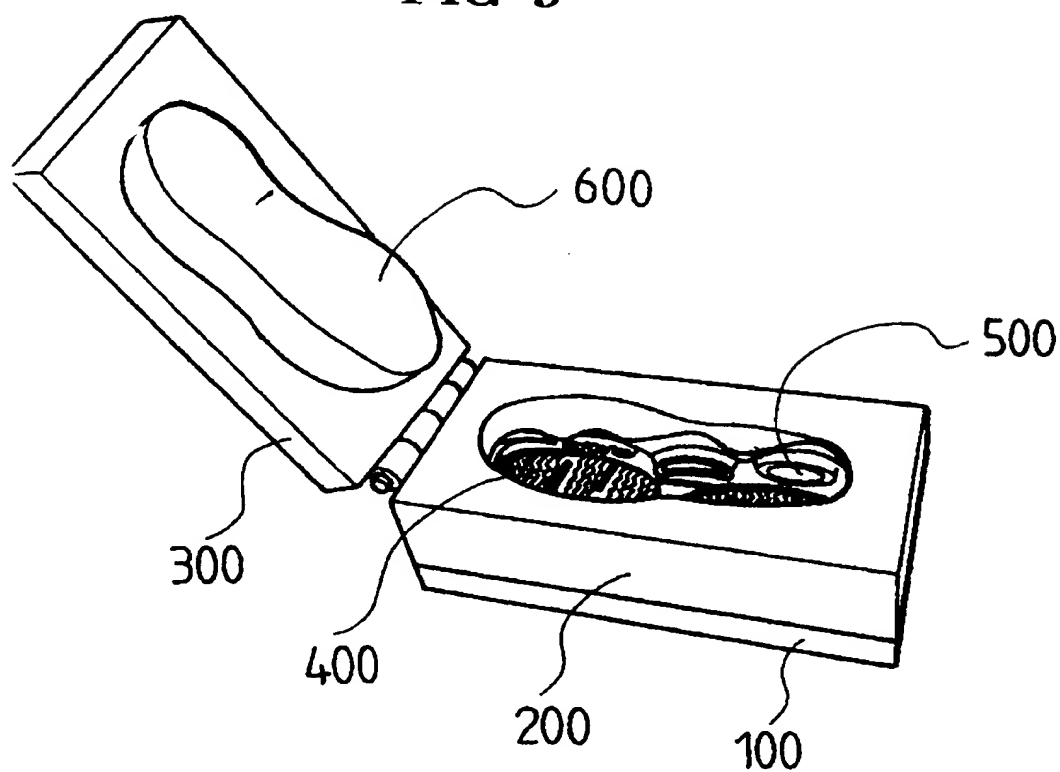
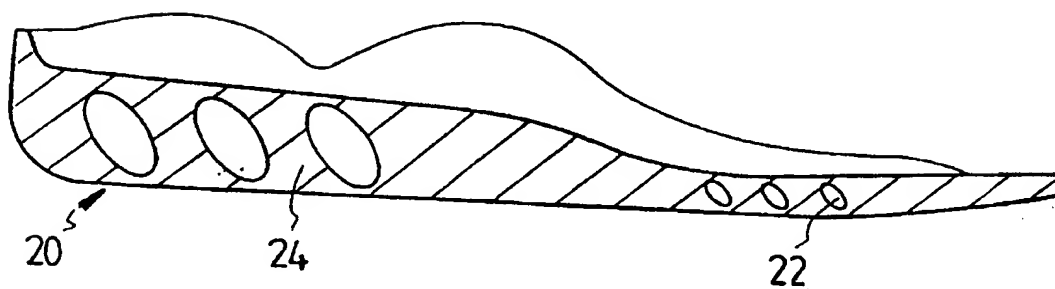


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FIG 8



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**FIG 9****FIG 10**

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FIG 11

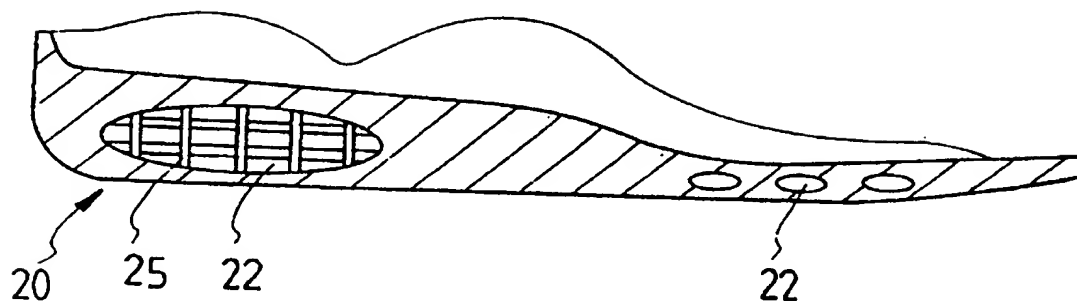


FIG 12

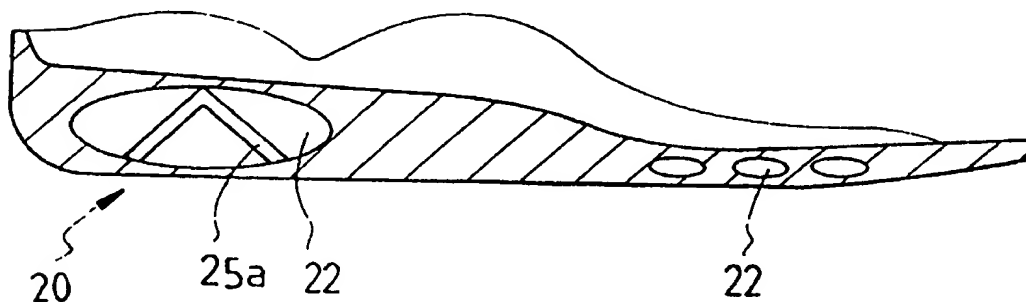
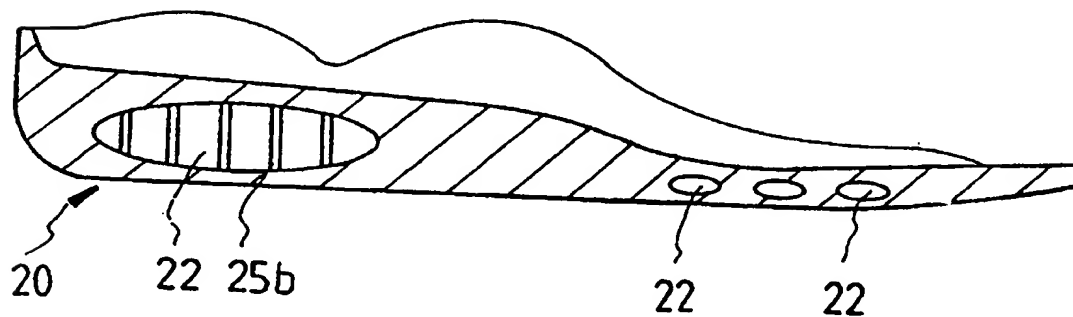


FIG 13



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FIG 14

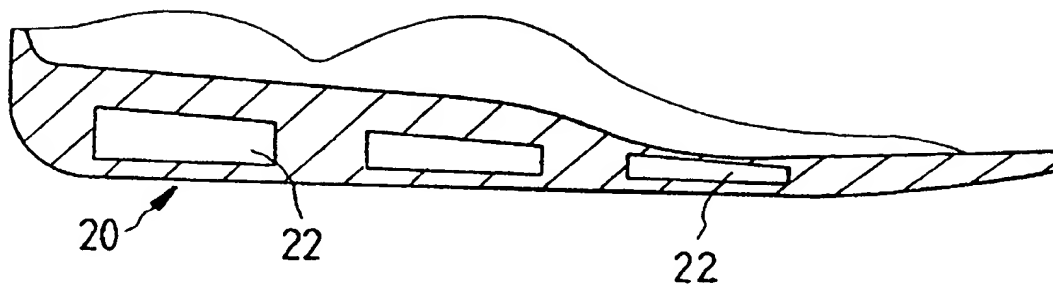


FIG 15

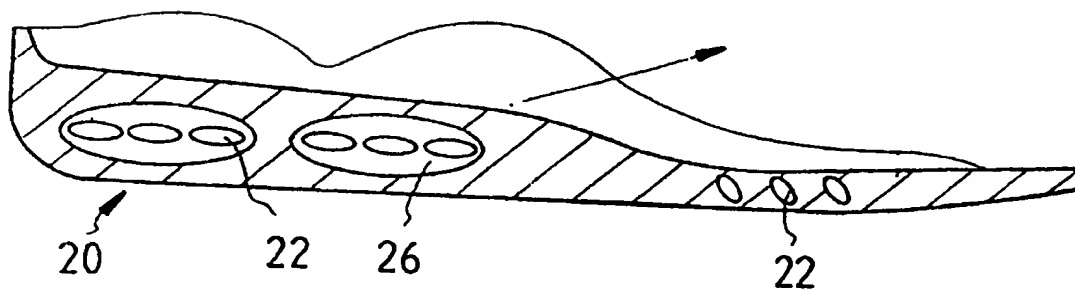


FIG 16

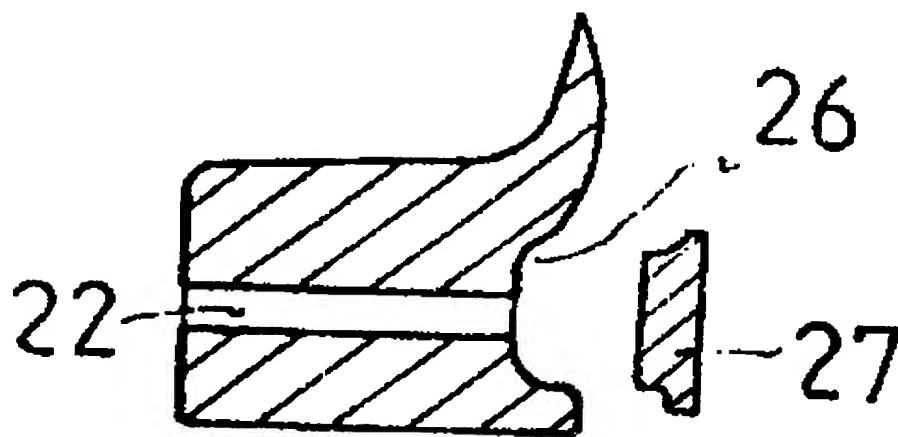
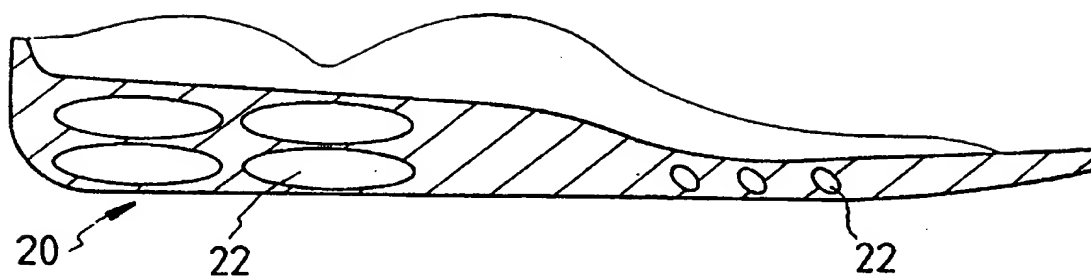


FIG 17



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FIG 18

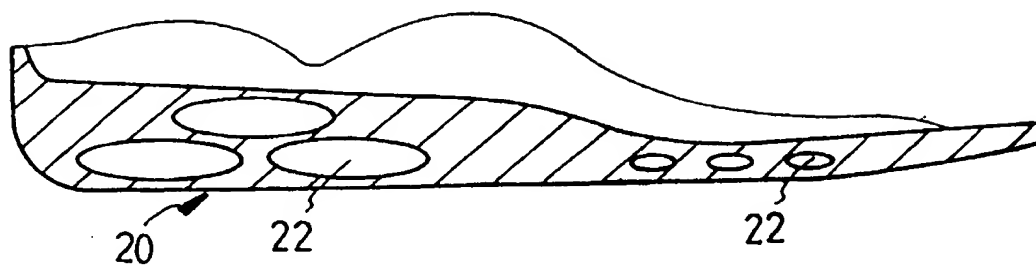


FIG 19

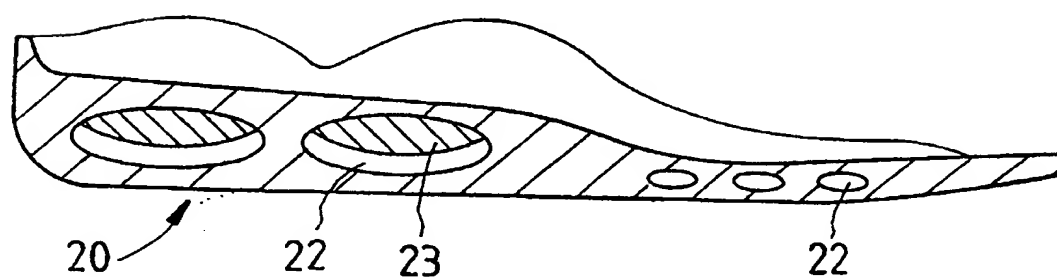
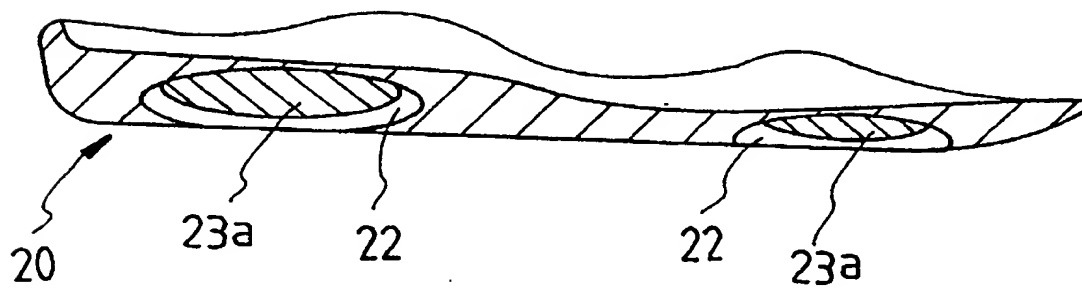


FIG 20



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FIG 21

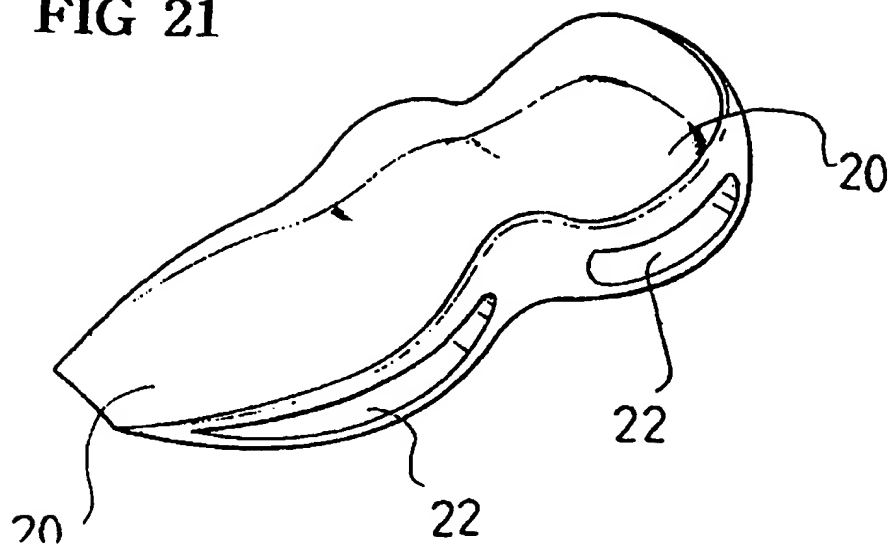
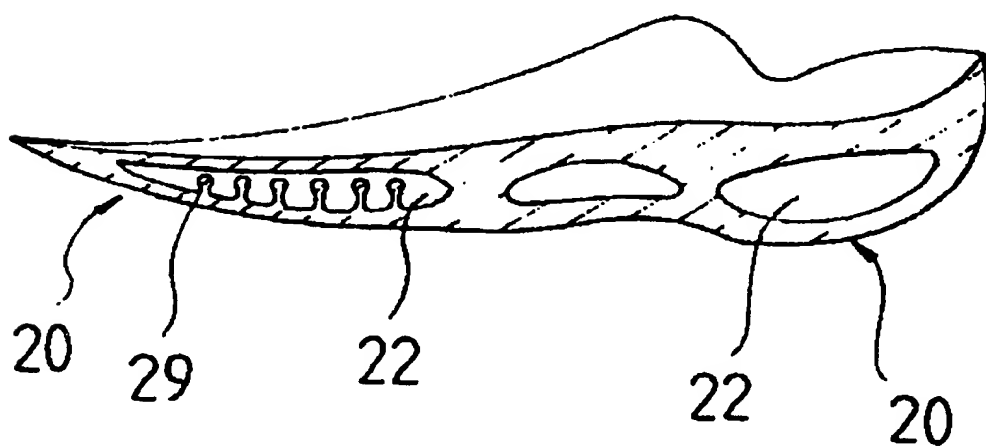


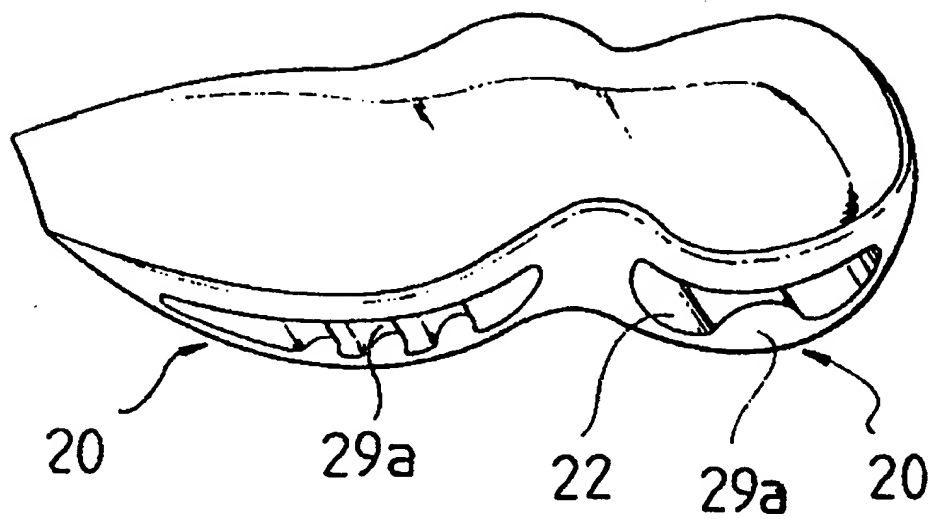
FIG 22





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**FIG 23**



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FIG 24

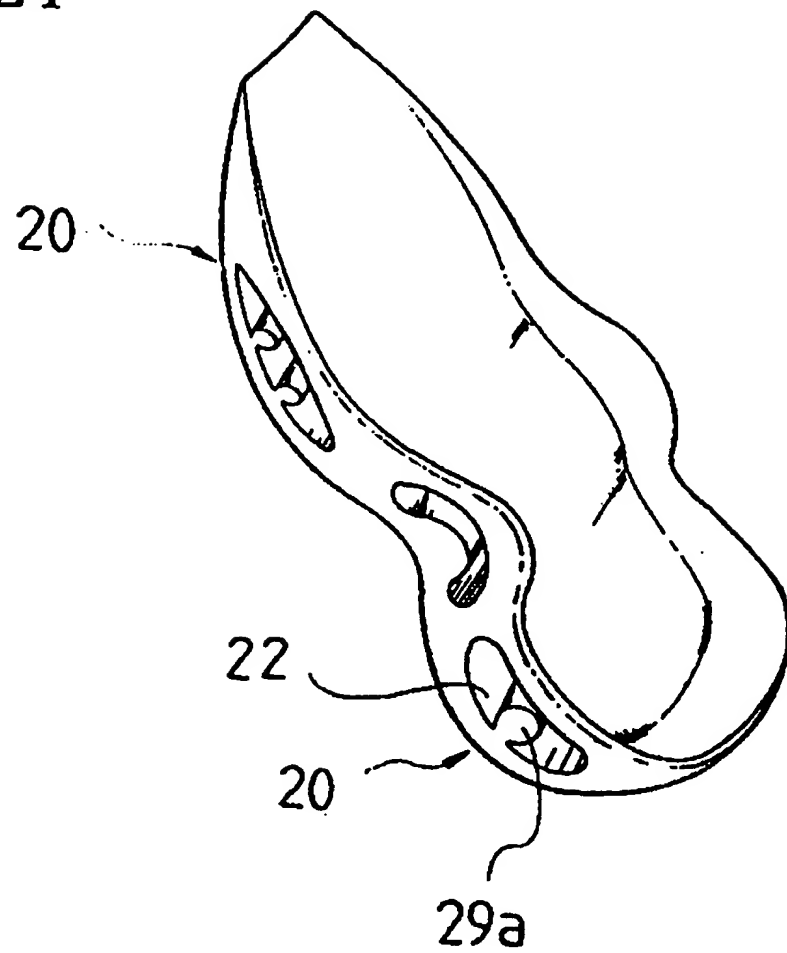


FIG 25

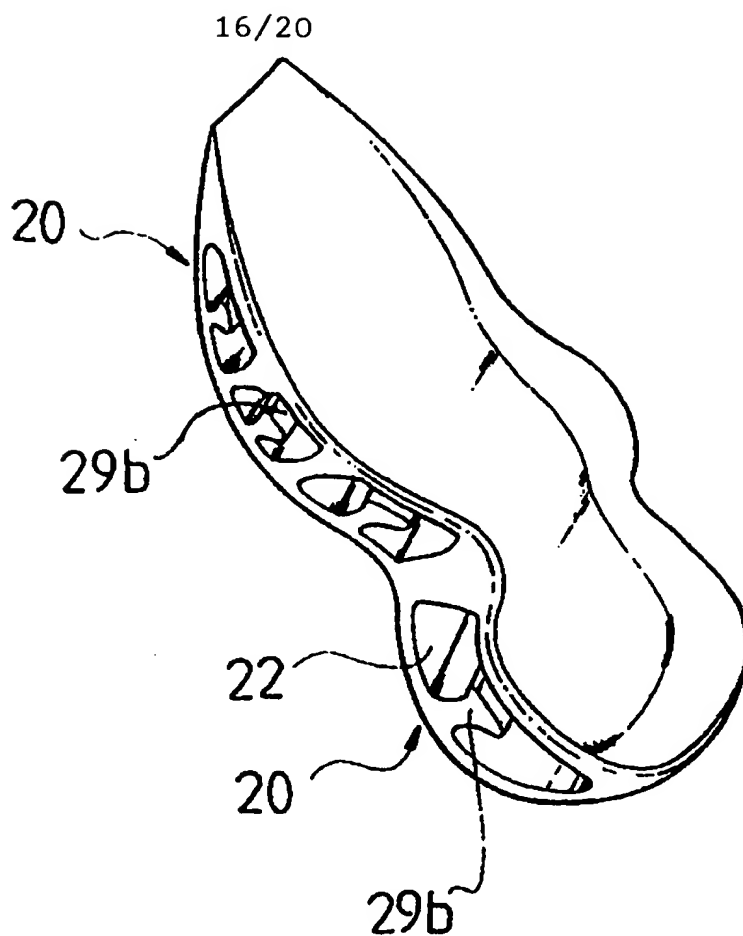
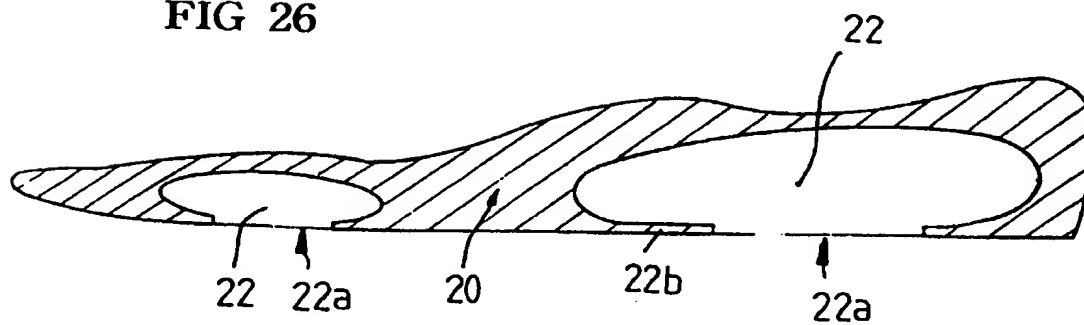


FIG 26



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FIG 27

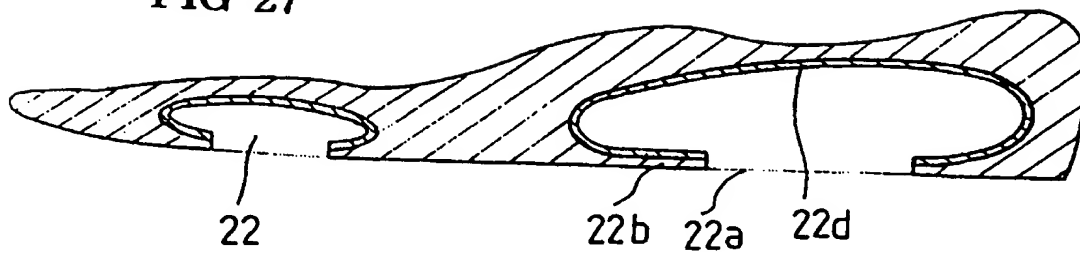


FIG 28

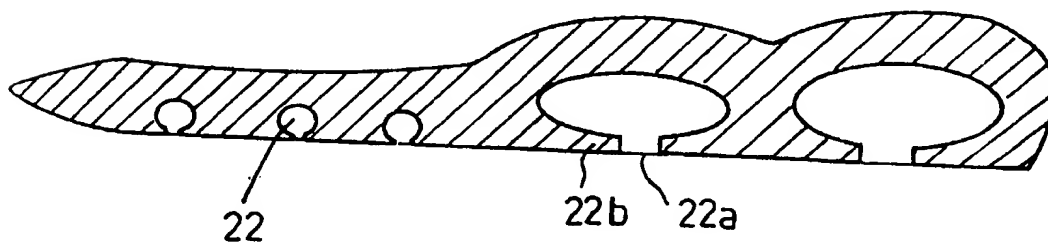
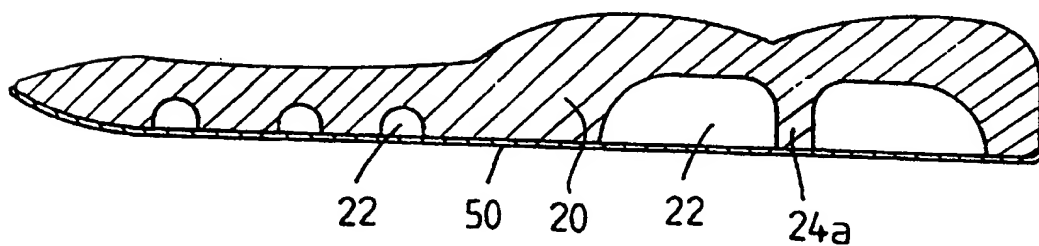
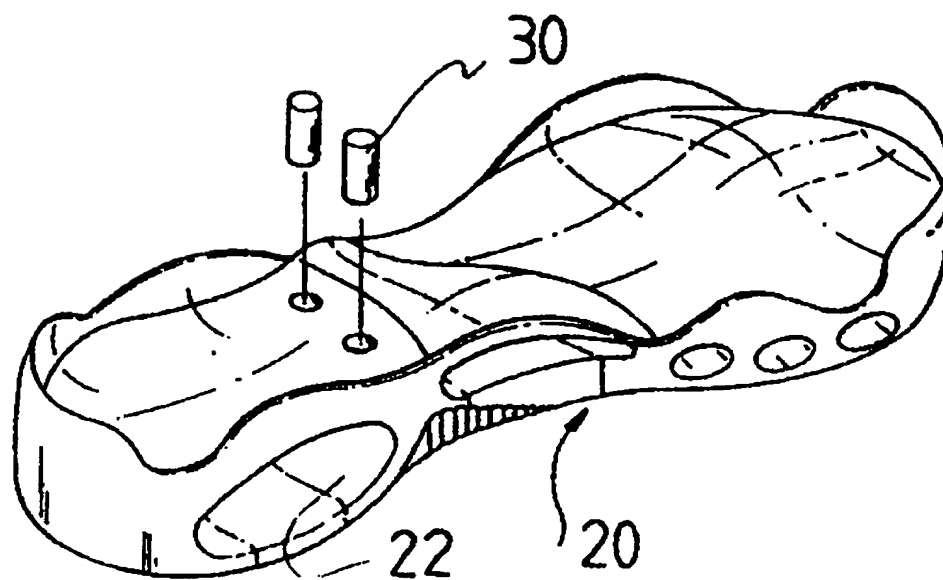


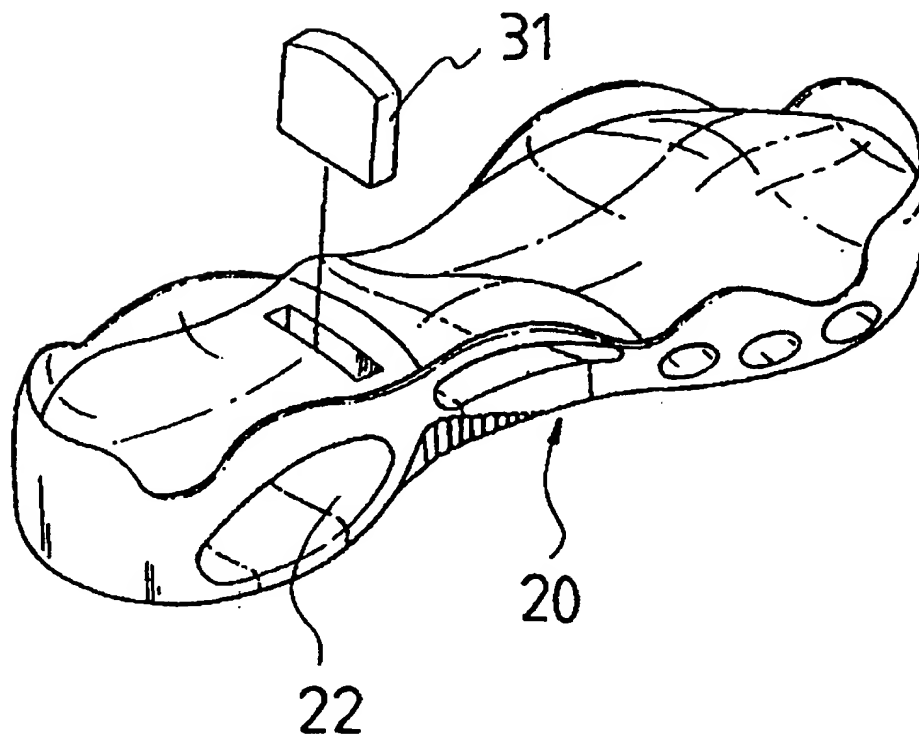
FIG 29



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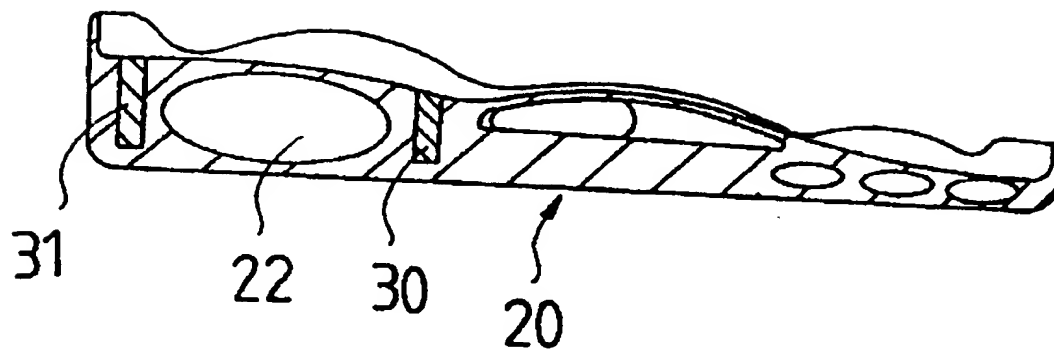
**FIG 30**

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**FIG 31**



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**FIG 32**





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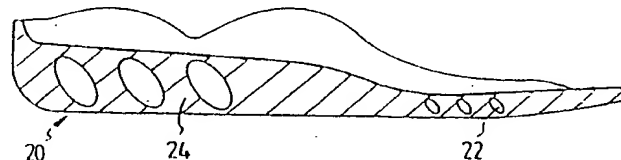
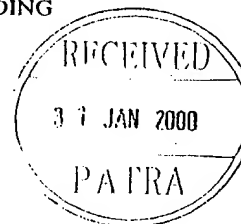
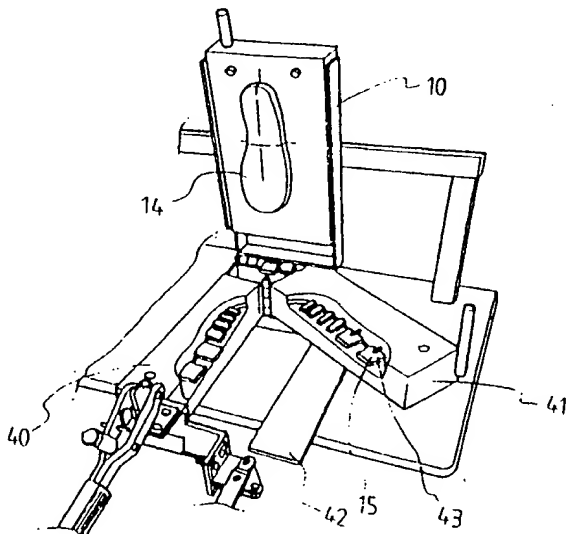
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(54) Title: THE OUTSOLE OF SHOE, ITS MANUFACTURING METHOD, AND ITS MOLDING



## (57) Abstract

A method of manufacturing outsole of sports shoes in which the throughout holes are formed, manufacturing method comprising the steps of forming the midsole so as to be cut and bisected, joining the cut surface after this, and joining midsole by covering the entire lower surface of midsole after this. A molding for forming of the midsole wherein the molding comprises three widely known and disclosed stages, the molding comprises a lower stage molding (12), in which the throughout hole protrusion (15) is fixed in two columns, a middle stage molding (11), in which the throughout holes (15) that is formed in two columns by forming two sheds (18) divided by a separating partition (13) are inclined toward a separating partition (13) of the respective shed (18), and a higher stage molding (10), in which a molding protrusion (14) that is inserted through sheds (18) of the middle molding (11) so as to be placed in parts, where the respective the throughout hole protrusion (15) formed on the middle molding (12) is not formed. An outsole of a shoe, in which the throughout holes are passing through the front edge and back edge in side direction of the midsole formed in a shooting molding.



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International application No.  
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X	EP 0695514 A1 (PARK) 7 February 1996 (07.02.96) totality.	5-11
X	EP 0694264 A2 (ADIDAS) 31 January 1996 (31.01.96) totality.	5-11
A	US 3444591 A (BECKA) 20 May 1969 (20.05.69) see fig. 1,2.	1
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EP A	695514	JF A2 8173207 JF B2 2635538	09-07-1986 30-07-1997
EP A	694264	EP A2 694264 EP A3 694264 US A 5461800 US A 5822886	31-01-1996 02-05-1997 31-10-1995 20-10-1998
US A	3444591	20-05-1969	DE A 1779880 29-04-1971 DE A 1604588 04-05-1972 DE B 1604588 04-05-1972 DE C2 1604588 06-12-1973 DE C3 1779880 03-10-1974